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# The Epidemiological Profil of Digestive Cancers in Secondary and Tertiary Health Care Facilities in Cameroon

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## Abstract

**Background:** Cancers have been a major public health problem in developing countries in recent years. The aim of this study was to determine the epidemiological profile of digestive cancers in secondary and tertiary health care facilities in Cameroon. **Methodology:** This was a cross sectional and descriptive study conducted over a period of 12 months in 14 health structures over the national territory. Included in our study were patients aged 15 and above with a histologically proven digestive cancer, patients with a clinical, biological and morphologic evidence of a digestive cancer. Socio-demographic (age, gender, region of origin, profession), clinical (symptoms on diagnosis, personal and family past history, consumption habits, tumour location) and paraclinical data were recorded on a pretested questionnaire. Data was analysed using SPSS version 20.0. Quantitative data was expressed as means with their corresponding standard deviations. Chi square was used for correlation between variables. A P value < 0.05 was considered statistically significant. **Results:** Five hundred and eighty-two cases of digestive cancers were recorded out of 37,780 consultations/admissions during the study period giving a prevalence of 1.5% with a male predominance (58.1%). The mean age was 53.11 ± 17.26 years (15 - 99) with 33.8% of them below 45 years of age. Tumours were predominantly localized in the liver (43.5%) and colon (24.9%). Adenocarcinoma was the most common histological type in 44.5% of all cases. Alcohol consumption was found to be associated with colorectal cancer ($p = 0.028$) while tobacco consumption was found to be significantly associated with oesophageal cancer ($p \leq 0.001$) and gastric cancer ($p = 0.0047$). **Conclu-**

**sion:** A third of patients with digestive cancers were aged less than 45 years suggesting an early onset of these cancers in our setting. Relatively low prevalence with the liver being the most common site of localisation in our setting.

## Keywords

Digestive Cancer, Secondary and Tertiary Health Care Facilities, Cameroon

## 1. Introduction

Cancer is one of the major causes of death in adults. One out of 10 deaths worldwide is associated with cancer related causes [1] [2]. Cancers with the highest mortality rate worldwide include those of the lungs, stomach and liver [3]. Despite the use of diagnostic endoscopy to identify digestive cancers in Cameroon, most of these patients present late with advanced disease. More so, we have very few clinical pathology laboratories and clinical pathologists in Cameroon and data on the epidemiologic and clinical profile of digestive cancers is rare. We therefore sought to determine the epidemiological and clinical profile of patients with digestive cancers.

## 2. Patients and Methods

This was a cross sectional and descriptive study conducted over a period of 12 months in 14 health structures over the national territory (Yaoundé central hospital, university teaching hospital Yaoundé, Yaoundé general hospital, Essos hospital centre, Douala general Hospital, Laquintinie hospital, Buea regional hospital, Bafoussam regional hospital, Bertoua regional hospital, Garoua regional hospital, Ngaoundere regional hospital, Ebolowa regional hospital, Maroua regional hospital, and Mbingo Baptist hospital).

Digestive cancers refer to all malignant tumours that develop with the digestive tract as their starting point. During the study period we searched the hospital consultation registers for all patients with a diagnosis of digestive cancer. Then we collected all the files of these patients. The files that included pathology reports were selected. Included in our study were patients aged 15 and above with a histologically proven digestive cancer, patients with a clinical, biological and morphologic evidence of a digestive cancer.

A pre-arranged questionnaire was then completed. It included the Socio-demographic (age, gender, region of origin, profession), clinical (symptoms on diagnosis, personal and family past history, consumption habits, tumour location) and paraclinical data. Data was analysed using SPSS version 20.0. Quantitative data was expressed as means with their corresponding standard deviations. Chi square was used for correlation between variables. A P value $< 0.05$ was considered statistically significant.

Administrative authorisation was obtained from the various health facility re-

view boards while ethical clearance was procured from the University of Douala institutional review board.

## 3. Results

Five hundred and eighty-two cases of digestive cancers were recorded out of 37,780 consultations/admissions during the study period giving a prevalence of 1.5% with a male predominance (58.1%). The mean age was 53.11 ± 17.26 years (15 - 99) with 33.7% of them below 45 years of age with 55 - 65 years being the most represented age group (Table 1).

Tumours were predominantly localized in the liver (43.5%) and colon (24.9%) (Figure 1).

Asthenia (96.6%) and weight loss (95.9%), were the most common symptoms on diagnosis (Table 2).

The median duration between onset of symptoms and patient consultation was 5.99 months (1 - 60 months). Adenocarcinoma was the most common histological type found in tumours of the lower gastrointestinal tract including the liver and bile ducts. Table 3 shows the cancer histology according to their location.

HIV serology was positive in 11% of patients, hepatitis B in 35.5% and hepatitis C in 35% of patients, 78.9% of patients were alcohol consumers, 15.5% were permanent smokers and 76.1% were physically inactive, 66.2% of patients had regular consumption of smoked foods. 94.7% of patients had regular consumption of salty foods. Alcohol consumption was found to be associated with colorectal cancer ($p = 0.028$) while tobacco consumption was found to be significantly associated with oesophageal cancer ($p \leq 0.001$) and gastric cancer ($p = 0.0047$) (Table 4).

Table 1. Repartition of patients according to age.

| Age | Effective n = 582 | Percentage % |
|---|---|---|
| [15 - 25[ | 33 | 5.6 |
| [25 - 35[ | 66 | 11.3 |
| [35 - 45[ | 98 | 16.8 |
| [45 - 55[ | 85 | 14.6 |
| [55 - 65[ | 133 | 22.8 |
| [65 - 75[ | 108 | 18.5 |
| ≥75 | 59 | 10.1 |

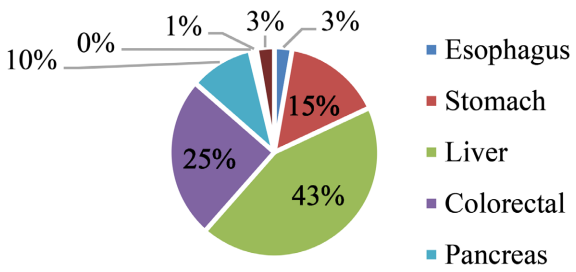


Figure 1. Digestive organs affected by cancer (n = 582).

**Table 2.** Clinical features of patients.

| Physical signs | Effective | Percentage % |
|---|---|---|
| Asthenia | 562 | 96.6 |
| Weight loss | 558 | 95.9 |
| Abdominal pain | 496 | 85.2 |
| Anorexia | 342 | 58.8 |
| Hepatomegaly | 261 | 44.8 |
| Jaundice | 225 | 38.7 |
| Change in bowel habits | 224 | 38.5 |
| Anemia | 149 | 25.6 |
| Ascites | 131 | 22.5 |
| Rectorrhagia | 89 | 15.3 |
| Fever | 60 | 10.3 |
| splenomegaly | 49 | 8.4 |
| Abdominal mass | 40 | 6.87 |
| Superficial adenopathies | 37 | 6.35 |
| Dysphagia | 19 | 3.3 |

**Table 3.** Cancer histology according to location.

| Location | Histology | Effective | Percentage |
|---|---|---|---|
| Esophagus n = 13 | Epidermoid carcinoma | 7 | 53.8 |
| | Adenocarcinoma | 4 | 30.7 |
| | Atypical | 2 | 15.3 |
| Stomach n = 83 | Adenocarcinoma | 68 | 81.9 |
| | Carcinoma | 7 | 8.4 |
| | Leiomyosarcoma | 1 | 1.2 |
| | Lymphoma | 1 | 1.2 |
| | Atypical | 1 | 1.2 |
| Liver n = 118 | Hepatocellular carcinoma | 118 | 100 |
| Colorectal n = 130 | Adenocarcinoma | 117 | 90 |
| | Carcinoma | 13 | 10 |
| Pancreas n = 12 | Adenocarcinoma | 12 | 100 |
| Gallbladder and biliary tract n = 1 | Cholangiosarcoma | 1 | 100 |
| Small intestine n = 4 | Adenocarcinoma | 3 | 75 |
| | Lymphoma | 1 | 25 |
| Anus n = 16 | Adenocarcinoma | 9 | 56.2 |
| | Epidermoid carcinoma | 5 | 31.2 |
| | Angiosarcoma | 1 | 6.2 |
| | Atypical | 1 | 6.2 |

**Table 4.** Factors associated with cancer.

| Variables | Œsophagus N/Total p value | Stomach N/Total p value | Pancreas N/Total p value | Small intestine N/Total p value | Colorectal N/Total p value | Anus N/Total p value | Liver N/Total p value | Gallbladder and biliary tract N/Total p value |
|---|---|---|---|---|---|---|---|---|
| Up to 55 years | 5/16<br>0.03 | 24/89<br>0.59 | 17/57<br>0.05 | / | 40/145<br>0.05 | 1/16<br>0.18 | 46/337<br>0.08 | / |
| Alcohol | 15/16<br>0.13 | 76/89<br>0.10 | 45/57<br>0.98 | / | 105/145<br>0.02 | 13/16<br>0.81 | 199/253<br>0.91 | / |
| Tobacco | 9/16<br><0.001 | 20/89<br>0.004 | 7/57<br>0.48 | / | 19/145<br>0.36 | 3/16<br>0.71 | 32/253<br>0.09 | / |
| Sedentary lifestyle | 12/16<br>0.91 | 73/83<br>0.15 | 46/57<br>0.39 | / | 102/145<br>0.06 | 13/16<br>0.62 | 192/253<br>0.91 | / |
| Ag Hbs | | | | | | | 119/207<br><0.05 | |
| Ac anti HVC | | | | | | | 118/204<br><0.05 | |

Oesophageal cancer was more common in patients between 55 - 64 years of age ($p = 0.034$).

## 4. Discussion

The mean age was 53.11 ± 17.26 years (15 - 99) with 33.8% of them below 45 years of age with a male predominance (58.1%) thus a relatively young population. Several authors in Africa [4] [5] [6] [7] [8] have reported similar young ages in the onset of digestive cancers whereas Western studies show a late onset in digestive cancers between 60 - 70 years of age [9] [10]. This could be partially explained by the presence of undiagnosed hereditary forms in our setting and thus suggesting oncogenetic screening in our setting.

Liver cancer was the most common digestive cancer (43.5%) with 47.1% of these patients having a positive HbsAg and 46.6% with positive HCV antibodies. Early studies in Cameroon [11] reported the liver as the most common site of digestive cancers. This could be explained by the presence of risk factors such as high viral hepatitis (B and C) prevalence in our setting which rather has a predominant vertical and horizontal transmission in our setting responsible for the early onset of this cancer. This finding however contrasts with other studies worldwide [9] [10] [12] [13] [14] which have colorectal cancer as the most frequent digestive cancer worldwide.

Asthenia, weight loss and abdominal pains were the most common symptoms. These symptoms are however non-specific and won't prompt initial high index of suspicion of digestive cancers. As such most patients usually consult severally, use traditional potions before the diagnosis is made and thus present lately with advanced disease. This late presentation for care has been reported by certain authors [6].

The prevalence of digestive cancers in this series was found to be 1.5% which is relatively low. Several authors in Africa reported prevalence ranging between 12.7% - 37% [5]. This difference could be explained by the fact that these studies were done over a longer period and included even many more patients. Though digestive endoscopy has increased cancer detection in our setting, it is readily not available and we equally have few trained clinical pathologists. All of these could explain low detection rate.

Seventy-eight point nine of patients were alcohol consumers, 15.5% were permanent smokers and 76.1% were physically inactive, 66.2% of patients had regular consumption of smoked foods, 94.7% of patients had regular consumption of salty foods. All of these factors have been reported to be associated with various forms of cancers. As such alcohol consumption was found to be associated with colorectal cancer ($p = 0.028$) while tobacco consumption was found to be significantly associated with oesophageal cancer ($p \leq 0.001$) and gastric cancer ($p = 0.0047$). Oesophageal cancer was more common in patients between 55 - 64 years of age ($p = 0.034$).

The main limitation of our work was the relatively short study period. On the other hand, its multicentric nature allowed us to have a representative sample from all of Cameroon, as recruitment was done in all regions

## 5. Conclusion

Digestive cancers are a public health problem in our country, because of their frequency, which seems to have doubled over the last two decades, but also because of their severity. One of the difficulties remains the availability of clinical pathology laboratories in the district hospitals delaying diagnosis and management. Long-time considered to be the prerogative of the male sex that we also found predominant, they have increasingly reached women. Despite the fact that the mean age of onset of digestive cancers was 53.11 years, patients under 45 years of age represented about one-third of our series. It thus appears that overall age of cancer onset is early in our setting, as compared to Western series. The main risk factors were the consumption of alcohol, tobacco. The liver remains the most affected digestive organ a quarter of a century later, due to a high frequency of viral hepatitis in our country. The routine vaccination of new-borns is currently raising hopes for a reduction in the prevalence of these cancers if this strategy is sustained and expanded.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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